

Date:
User:Wednesday, 6/6/2007 3:06:15 PM
Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services
 Job Number : 32832 -3
 Estimate Number : 12812
 P.O. Number : N/A
 This Issue : 6/6/2007 S.O. No. : N/A
 Prsht Rev. : NC
 First Issue : N/A Type : MACHINED PARTS
 Previous Run : 32607
 Written By :
 Checked & Approved By : JF 07.06.07
 Comment : est rev A new issue 07.03.28 EC
 est rev B released, changed mat'l EC

Drawing Name : BRACKET

Part Number : D3610041
 Drawing Number : D3610 REV.A
 Project Number : N/A
 Drawing Revision : A
 Material : N/A
 Due Date : 6/30/2007

Qty: 20 Um: Each

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description:

1.0 M4140NB1500X15000 AISI 4140 Steel Bar



Comment: Qty: 0.5775 f(s)/Unit Total: 11.5500 f(s)
 AISI 4140 Steel Bar

2.0 BAND SAW BAND SAW



Comment: BAND SAW

Cut blank 6.600 " long

M16332 X 3 pcs

M104993 X 12 pcs

3.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1

1- Mill as per Folio FA692 Rev: AA & Dwg D3610 Rev: A

2-Deburr per dwg D3610

J.F. / 07/09/03

4.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

5.0 QC8 SECOND CHECK



Comment: SECOND CHECK

J.F. 07/09/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
07/09/05	6	split 4/0	SB	07/09/05	5		

Part No: D3610-041 PAR #: NA Fault Category: Prod/Machine Parts NCR: Yes No DQA: Yes Date: 07/09/06
 QA: N/C Closed: Yes Date: 07.09.06

NCR: <u>32832</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07/08/29	3.0	origin was slightly off, resulting in the holes being shifted over. 0.125". The holes were only spotted from the center drill, maximum 0.020" deep. L.C's origin was off, operator error	<i>[Signature]</i>	Fill & spot drilled holes with weld, per 031004, grind flush	<i>[Signature]</i> 07/08/29	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i> 07/08/29
07/08/29 07/09/01	3.0	one part scrap tool pulled out of holder part is 1.200 instead of 1.252	<i>[Signature]</i>	Scrap and replace and remove tool.	J.L. 07/08/29	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i> 07/08/29
07/09/03	3.0	1 part is scrap, the piece move when machining	<i>[Signature]</i>	Scrap, no replace	J.F. 07/09/03	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

NOTE: Date & initial all entries

SEE ^{back of} next page to.

Shp 06/09

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET

Job Number: 32832

Part Number: D3610041

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1
1-C'SINK AS PER DWG D3610

FF 07-09-05

13

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

SB 07/09/05

13

8.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING
Powder Coat Grey Sandtex (Ref: 4.3.5.6) as per QSI 005 4.3

M104846

13X

m-l 07/09/05

9.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FF 07-09-05

13

10.0

MS21075L3

Nutplate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 20.0000 Each(s)

Nutplate

Batch:

M 18537 18537 13X

FF 07-09-05

13

11.0

MS20426AD34

RIVET



Comment: Qty.: 2.0000 Each(s)/Unit Total: 40.0000 Each(s)

RIVET

batch:

M 102404

FF 07-09-05

13

12.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1
Rivet Nut Plate as per Dwg D3610

FF 07-09-05

13

13.0

QC5

INSPECT WORK TO CURRENT STEP






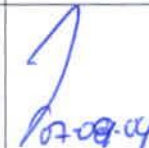
Comment: INSPECT WORK TO CURRENT STEP

FF 07/09/05 13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07-09-04	3.0	1 st part was machined slightly too thick. R50, is 0.270". RCS origin slightly off. over set-up error.		Part acceptable. see e-mail.	N/A			

NOTE: Date & initial all entries

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User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET

Job Number: 32832

Part Number: D3610041

Job Number:



Seq. #:

Machine Or Operation:

Description :

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

57244A

3/2/6

(13)

15.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

1 207109/06 (B)

Job Completion



U 8709-06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

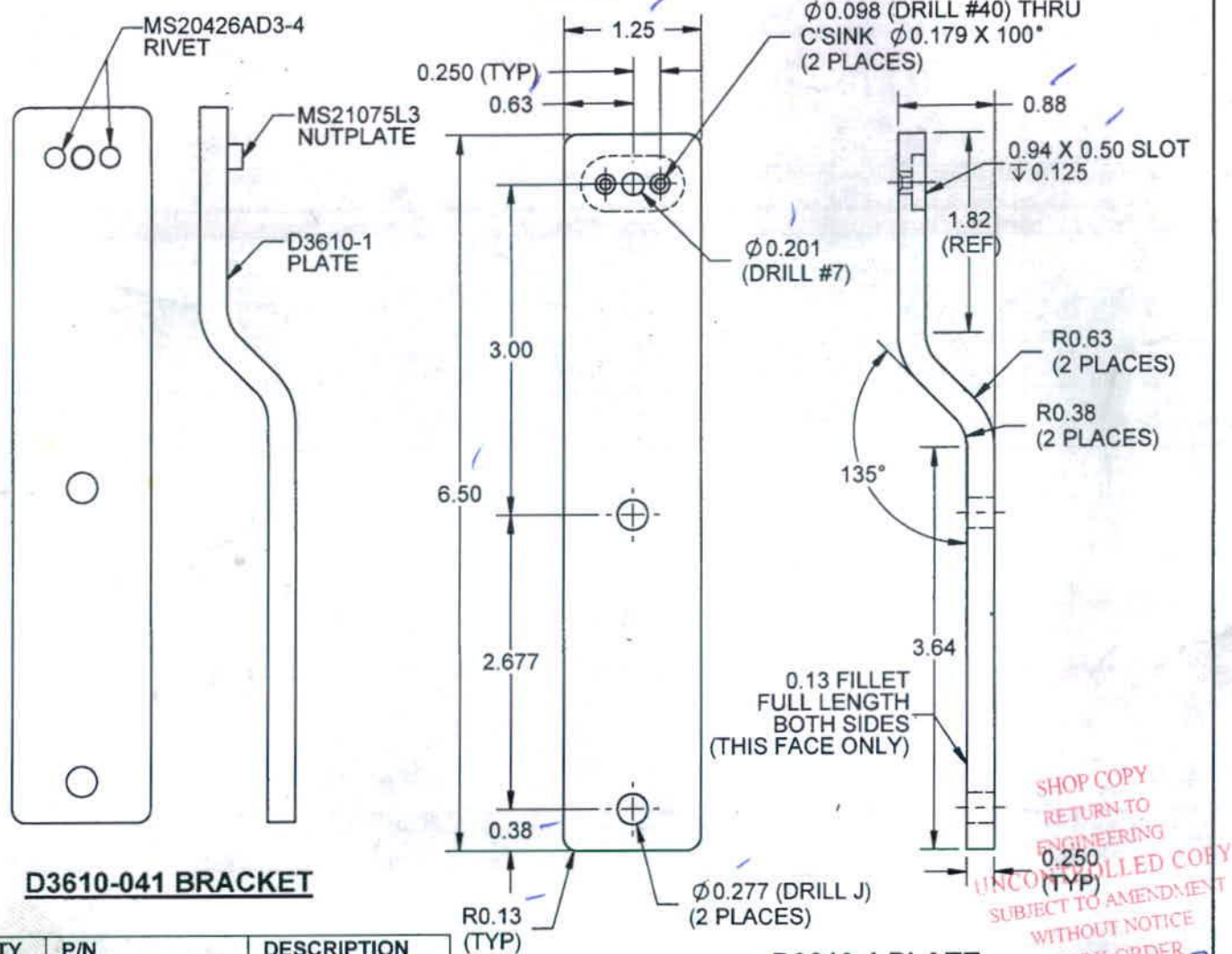
QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN <i>LE</i>	DRAWN BY <i>LE</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3610	REV. A SHEET 1 OF 1
DATE 07.04.20	TITLE BRACKET		SCALE 2:3
REV A	DATE 07.04.20	DESCRIPTION NEW ISSUE	

**D3610-041 BRACKET****D3610-1 PLATE**

QTY	P/N	DESCRIPTION
X	BRACKET	D3610-041
1	D3610-1	PLATE
1	MS21075L3	NUTPLATE
2	MS20426AD3-4	RIVET

D3610-041 NOTES:

1) IDENTIFY WITH DART P/N "D3610-041" USING FINE POINT PERMANENT INK MARKER

D3610-1 NOTES:

- 1) MATERIAL: 4130N STEEL BAR PER MIL-S-6758 OR AMS 6348 OR 6370 OR 6528 (REF DART SPEC M4130N-B) OR 4140N STEEL BAR PER MIL-S-5626 OR AMS 6382 OR 6349 OR 6529 (REF DART SPEC M4140N-B)
- 2) FINISH: POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.010 MAX

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SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 32832

RELEASED07.04.25 *[Signature]*

Jason Murdoch

From: David Shepherd [dshepherd@dartaero.com]
Sent: Thursday, August 30, 2007 3:43 PM
To: 'Jason Murdoch'
Cc: 'Leanne Elsliger'
Subject: FW: NCR for D3610-041 B32832

Jason,

I got a sketch from Leanne illustrating the problem.
Therefore, the repair you have outlined below is acceptable for this part.

David

From: David Shepherd [mailto:dshepherd@dartaero.com]
Sent: Thursday, August 30, 2007 10:51 AM
To: 'Jason Murdoch'
Cc: 'Leanne Elsliger'
Subject: RE: NCR for D3610-041 B32832

Jason,

I had asked Leanne for some sort of sketch/picture so that I was clear.
I haven't received that yet.
Maybe between the 2 of you, you could get me something.

David

From: Jason Murdoch [mailto:jmurdoch@dartaero.com]
Sent: Wednesday, August 29, 2007 9:54 AM
To: davids@dartaero.com; David Shepherd
Subject: NCR for D3610-041 B32832

Hi again. There was a D3610-041 bracket that the holes were only spot drilled, by a center drill bit, 0.025" in diameter, 0.020" deep, and positioned .144" off the center of the part, due to an incorrect origin. The material that is being machined is 4141 steel bar. What I had done, was the holes were filled with weld, buffed and then remachined. I don't see this changing the material temper. The part looks great. Is this acceptable to you?

jmurdoch@dartaero.com
Q.C. COORDINATOR

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.484 / Virus Database: 269.12.10/977 - Release Date: 8/28/2007 4:29 PM

No virus found in this outgoing message.
Checked by AVG Free Edition.

9/4/2007

Jason Murdoch

From: David Shepherd [dshepherd@dartaero.com]
Sent: Tuesday, September 04, 2007 11:06 AM
To: 'Leanne Elsliger'; 'Jason Murdoch'
Subject: RE: NCR D3610-1 B32832

Acceptable deviation.

David

From: Leanne Elsliger [mailto:lelsiger@dartaero.com]
Sent: Tuesday, September 04, 2007 7:00 AM
To: 'Jason Murdoch'
Cc: 'David Shepherd'
Subject: RE: NCR D3610-1 B32832

This sounds fine to me.

Leanne

From: Jason Murdoch [mailto:jmurdoch@dartaero.com]
Sent: September 4, 2007 8:56 AM
To: 'Leanne Elsliger'
Cc: 'David Shepherd'
Subject: NCR D3610-1 B32832

Good morning, Leanne. There was one bracket the was machined too thick. The Dwg is 0.250" thick, and the part is 0.270". 0.010" over tolerance, is this acceptable?

jmurdoch@dartaero.com
Q.C. COORDINATOR

No virus found in this incoming message.

Checked by AVG Free Edition.

Version: 7.5.485 / Virus Database: 269.13.3/986 - Release Date: 9/3/2007 9:31 AM

No virus found in this outgoing message.

Checked by AVG Free Edition.

Version: 7.5.485 / Virus Database: 269.13.3/986 - Release Date: 9/3/2007 9:31 AM

9/4/2007

